

CLAIMS

1. A radiology device comprising an X-ray source (11) for exposing a subject (S) to the radiation of said source, means (12) for converting the X-rays into optical images so as to form primary optical images, means (20) for transforming the primary optical images into secondary optical images, and means (40) for displaying the secondary images to a user, characterized in that the means for forming the secondary optical images comprise an optical chain comprising in succession, from the output of the converter to the output of the device, an image enlargement assembly (22) exposed directly to the primary images from said conversion means (12), an assembly (23) for optical intensification of the enlarged images and a photosensitive matrix sensor (25) for making said secondary images, and in that the enlargement assembly (22) is made up solely of optical elements performing no discretization of the images.

2. The radiology device as claimed in claim 1, characterized in that the enlargement assembly (22) is a variable enlargement assembly (22), able to enlarge the images according to a desired enlargement coefficient within a given range.

3. The radiology device as claimed in one of the preceding claims, characterized in that it comprises means for moving the elements of the optical chain in a plane generally parallel to the midplane of the conversion means.

4. The radiology device as claimed in the preceding claim, characterized in that it comprises a central control unit (30) for controlling the movement of the elements of the optical chain.

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5. The radiology device as claimed in the preceding claim, characterized in that the central control unit is physically distanced from the other elements of the device.

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6. The radiology device as claimed in one of the preceding claims, characterized in that it comprises means of monitoring the exposure and the degree of enlargement of the images.

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7. The radiology device as claimed in one of the preceding claims, characterized in that the assembly (23) for optical intensification of the images comprises components of the MCP type.

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8. The radiology device as claimed in one of the preceding claims, characterized in that it comprises means (31) for digitizing the secondary images arising from the photosensitive matrix sensor.

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9. The radiology device as claimed in the preceding claim, characterized in that it comprises interfaces for distributing the images destined for digital peripherals.

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10. The radiology device as claimed in one of the preceding claims, characterized in that it comprises a screen for visualizing the digitized secondary images.

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11. The radiology device as claimed in one of the preceding claims, characterized in that the means (12) for converting the X-rays into optical images consist of a fluoroscopy screen of the phosphor coating screen type.

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12. The radiology device as claimed in one of the preceding claims, characterized in that said optical

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chain is directed along a different axis from the normal to the midplane of the means (12) for converting the X-rays into optical images, the device comprises a mirror for deflecting the primary images to the optical
5 chain and the device comprises a shield (27) for protecting the elements of the optical chain from the X-rays.

13. The radiology device as claimed in one of the
10 preceding claims, characterized in that the optical chain comprises a refocusing lens (24).

14. The radiology device as claimed in one of the preceding claims, characterized in that it comprises a
15 mirror (28) for separating the images arising from the intensification assembly (23) and a digital video camera (29).

15. The radiology device as claimed in one of the
20 preceding claims, characterized in that the optical coupling between the intensification assembly (23) and the sensor (25) is effected by optical fibers (24').

16. The use of a radiology device as claimed in one of
25 the preceding claims for real-time medical examination.

17. The use of a radiology device as claimed in one of
claims 1 to 15 for nondestructive qualitative
inspection of the materials, in particular in the
30 industrial or maritime sector.